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(54) Title: **USE OF XANTHOPHYLLS, ASTAXANTHIN E.G., FOR TREATMENT OF AUTOIMMUNE DISEASES, CHRONIC
VIRAL AND INTRACELLULAR BACTERIAL INFECTIONS**

(57) Abstract: The use of at least one type of xanthophylls for the production of a medicament for suppression of excessive Th1 cell mediated immune responses and stimulation of Th2 cell mediated immune responses in a patient during ongoing infection and/or inflammation in said patient is disclosed. Excessive Th1 cell mediated immune responses are caused by such autoimmune diseases and chronic viral and intracellular bacterial infections as Psoriasis vulgaris, Multiple sclerosis (MS), Rheumatoid arthritis, Crohn's disease, Insulin-dependent diabetes mellitus, Tuberculosis (TB), Acute graft-versus-host disease (transplant rejection) and HIV virus infection. The preferred type of xanthophyll is astaxanthin, particularly in a form esterified with fatty acids, obtainable by for example culturing the algae *Haematococcus* sp. Further, a method of suppressing excessive Th1 mediated immune responses and stimulating Th2 cell mediated immune responses in a patient during ongoing infection and/or inflammation in said patient is disclosed.

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